MINUTES OF THE PROFICIENCY TESTING COMMITTEE MEETING AUGUST 20, 2002

The Proficiency Testing Committee of the National Environmental Laboratory Accreditation Conference (NELAC) met by teleconference on Tuesday, August 20, 2002, at 1:00 p.m., Eastern Daylight Time (EDT). Chair RaeAnn Haynes of the State of Oregon DEQ led the meeting. The Agenda is given in Attachment A. A list of Action Items is given in Attachment B and the List of Participants is given in Attachment C. *The purpose of the meeting was to address items of importance identified in the meeting agenda.*

INTRODUCTION

Ms. Haynes called the meeting to order and took attendance.

MINUTES AND ACTION ITEM REVIEW

Minutes from the June 11, 2002, teleconference were reviewed and accepted as written.

ACTION ITEMS FROM NELAC 8

1. The Committee will work with the EPA to revise the Criteria Document. Revision of the Criteria Document is an ongoing issue. Ms. Haynes received a letter from Paul Kimsey stating that the Office of Water and the Office of Ground Water and Drinking Water are responsible for revisions to the Criteria Document. Any comments regarding this subject should be forwarded to these offices.

2. The Committee will work on finding a mechanism to develop a proficiency testing database for monitoring proficiency test study data. The Committee decided that this is a critical subject and will try to discuss it later in this teleconference.

3. The Committee will discuss expanding proficiency testing programs to include additional analytes and matrices. The Committee felt that this issue fell under action item #5.

4. The Committee will work with the NELAP AAs subcommittee to designate additional PTOB/PTPA's. Discussion ensued regarding oversite criteria with PTOB/PTPA's, which appears in Chapter 2 Appendix D of the Standards. Mike Miller will be speaking with the NELAP AAs concerning the rewriting of Appendix D. Ms. Hayes commented that she would also speak with Barbara Burmeister concerning this issue.

5. The Radiochemistry Subcommittee will discuss acceptance criteria for other matrices. John Griggs noted that acceptance criteria for other matrices is the next item that the Subcommittee will be discussing.

6. The Committee will work towards producing standardized analyte, method and technology codes. Producing standardized codes is an ongoing issue throughout NELAC. Mr. Miller suggested that the description key in the codes document be moved from the bottom to the top of the document. Discussion ensued and it was decided to formulate the description key into a header to appear at the top of each page of the codes document; therefore, making it easier for the reader.

7. Preparation methods are working to create a basic structure of acceptance criteria for everyone to follow. The Committee decided that this issue would require further discussion.

MEMBERSHIP IN INELA

Ms. Haynes noted that INELA is a non-profit organization that will be inviting the standing committees of NELAC to join their standards developing organization. There were a few questions raised concerning how standards development will change with the transition into INELA. Since this issue is still in the planning stages, questions will be answered in time. The Committee was in agreement that they supported the transition to INELA. Ms. Haynes will forward the invitation to join INELA to Committee members who did not receive it.

RADIOCHEMISTRY PT ACCEPTANCE LIMITS

Mr. Griggs reported from the Radiochemistry Subcommittee that one of the first tasks they were asked to do was to review relevant portions of the radiochemistry criteria document and develop a summarization of the acceptance criteria. A first draft of this document, which may be viewed in Attachment D, was sent to the Committee members for discussion. Mr. Griggs explained: the first page is a list for the average and range for acceptance limits; the second page is a description of the data evaluation procedure and how acceptance limits are generated; and the last page is a standard deviation that the EPA has generated over the years from the radiochemistry program. The Committee agreed that the document should be posted on the website. Questions arose concerning what would happen if, in the future, someone wanted to make changes to the document. It was suggested to use version numbers on the document if changes are made. This document will be forwarded to Jeanne Hankins for posting to the website as well as inquire about making changes to it in the future.

FOT ACCEPTANCE CRITERIA SUBCOMMITTEE STATUS

Ms. Haynes reported that the Subcommittee has not had a meeting since NELAC 8. However, they plan to meet within the next two weeks and she will give a report at the next teleconference.

UNIFORM ELECTRONIC REPORTING FORMAT

Anand Mudambi reported that the uniform electronic workgroup has received calls from various proficiency test providers declaring their interest to be a part of the workgroup. The workgroup is taking the proficiency test provider results and putting them in an electronic format to see if the states, Accrediting Authorities, and regions can accept and deliver this format to/from their databases. Mr. Mudambi will send this format to various entities and, if acceptable it will become the uniform format for everyone to use.

STATUS OF ONGOING PT PROVIDER MONITORING CRITERIA SUBCOMMITTEE

Ralph Obenauf reported that the Subcommittee has not met since NELAC 8; however, they will be meeting by teleconference shortly. He commented that his presentation from NELAC 8 may be viewed in Attachment H of the July 11, 2002, minutes.

INTERIM MEETING

Ms. Haynes announced that the deadline for submitting changes/comments for NELAC 8i, to Ms. Hankins, is September 24, 2002.

EPA/NIST

The Committee discussed the issue of NIST possibly leaving NELAC. Most members feel that NIST is a beneficial part of NELAC. If NIST decides to withdraw, the Committee will be notified.

OTHER ITEMS OR ISSUES

Larry Jackson commented on an issue that was addressed at NELAC 8 by a proficiency test provider. The issue concerns running matrix analytes matched QC samples simultaneously with proficiency test sample. Mr. Jackson feels this is inappropriate because a laboratory does not always run analyte and matrix matched QC samples for all regular commercial samples. Discussion ensued that the language in the Standards may need more clarity concerning this issue and that the Accrediting Authorities need to agree to enforce the Standards. Mr. Jackson noted that he would be watching for laboratories that are running QC/analyte samples at the same time as proficiency test samples. Ms. Haynes will look at the language in the Standards concerning running proficiency test samples in conjunction with other samples and report back to the Committee to discuss if the language should be written more clearly.

FUTURE TELECONFERENCES

The next teleconference will be Tuesday, September 3, 2002, at 1:00 p.m. EDT.

ADJOURNMENT

There being no further business to discuss the meeting was adjourned.

ATTACHMENT A

AGENDA
PROFICIENCY TESTING COMMITTEE MEETING
AUGUST 20, 2002

1. Minutes and status of action items from the NELAC 8 Conference
2. Membership in INELA
3. Radiochemistry PT acceptance limits (John)
4. FOT Acceptance criteria subcommittee status (RaeAnn)
5. Uniform electronic reporting format (Anand)
6. Ongoing PT provider monitoring criteria subcommittee status (Ralph)
7. Comments/questions received/Deadline for changes before the Interim Meeting
8. EPA/NIST items
9. Membership and Outreach Committee update
10. Other items or issues

ATTACHMENT B

ACTION ITEMS
PROFICIENCY TESTING COMMITTEE MEETING
AUGUST 20, 2002

Item No.	Date Proposed	Action	Date to be Completed
1.	8/20/02	Mr. Miller will be speaking with the NELAP AAs subcommittee concerning oversite criteria with PTOB/PTPA's and the rewriting of Appendix D. Ms. Hayes commented that she would also speak with Ms. Burmeister concerning this issue.	Open
2.	8/20/02	The description key of the analyte, method, and technology documents will be formulated into a header to appear at the top of each page of each document	Open
3.	8/20/02	Ms. Haynes will forward the invitation to join INELA to Committee members who did not receive it.	ASAP
4.	8/20/02	Mr. Griggs will forward the Radiochemistry Subcommittee's acceptance criteria summarization document to Ms. Hankins for posting to the website and will inquire concerning making changes to the document in the future if necessary.	ASAP
5.	8/20/02	Mr. Mudambi will send the uniform electronic format for proficiency test results to various entities to see if viable with their databases.	ASAP
6.	8/20/02	Ms. Haynes will look at the language in the Standards concerning running proficiency test samples in conjunction with other samples and report back to the Committee to discuss if the language should be written more clearly.	ASAP
7.	7/10/02	The Committee will work with the EPA to revise the Criteria Document.	Ongoing
8.	7/10/02	Find a mechanism to develop a proficiency testing database for monitoring proficiency test study data.	Ongoing
10.	7/10/02	Produce standardized analyte and technology codes.	Ongoing
11.	7/10/02	Preparation methods are working to create a basic structure of acceptance criteria for everyone to follow.	OPEN

ATTACHMENT C

LIST OF PARTICIPANTS
PROFICIENCY TESTING COMMITTEE MEETING
AUGUST 20, 2002

Name	Affiliation	Address
RaeAnn Haynes, Chair	State of Oregon DEQ	T: (503) 229-5983 F: (503) 229-6924 E: haynes.raeann@deq.state.or.us
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John Griggs	USEPA/OAR	T: (334) 270-3450 F: (334) 270-3454 E: griggs.john@epa.gov
Larry Jackson	Environmental Quality Management	T: (603) 924-6852 F: (603) 924-6346 E: lpjackson@msn.com
Tom McAninch	Eastman Chemical Company	T: (903) 237-5473 F: (903) 237-6395 E: twmcan@eastman.com
Michael Miller	NJ DEP - Lab Certification Office of QA	T: (609) 633-2804 F: (609) 777-1774 E: mmiller1@dep.state.nj.us
Anand Mudambi	US Army Corps of Engineers	T: (703) 603-8796 F: (703) 603-9112 E: mudambi.anand@epa.gov
Ralph Obenauf	SPEX CertiPrep, Inc.	T: (732) 549-7144 F: (732) 603-9647 E: robenauf@spexcsp.com
Jim Pletl (Absent)	Hampton Roads Sanitation District (HRSD)	
Marykay Steinman	M.J. Reider Associates, Inc.	T: (610) 374-5129 F: (610) 374-7234 E: msteinman@mjreider.com
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NELAC Radiochemistry PT Scoring Criteria

The results from a participating laboratory are classified as "Acceptable" or "Not Acceptable" based on the criteria in US EPA's "National Standards for Water Proficiency Testing Studies Criteria Document." The tests in the document include an evaluation of the *average* of the required three independent determinations for each radionuclide and an evaluation of the *range* of the three results for each radionuclide. Acceptance limits for the two tests are provided in Table 1 below. Following the table is a section that describes the method used for determining the acceptance limits for the average and range and for evaluating each participant's results.

Table 1. Acceptance Limits for the Average and Range

Analyte	Assigned Value (μ), pCi/L	Acceptance Limits for Average, pCi/L	Acceptance Limit for Range, pCi/L
Gross Alpha	$ 3 and # 20 > 20 and # 75	μ ± 8.66 μ ± 0.433μ	21.8 1.09μ
Gross Beta	$ 4 and # 50 > 50 and # 65	μ ± 8.66 μ ± 17.3	21.8 43.6
^{133}Ba	$ 9 and # 50 > 50 and # 110	μ ± 8.66 μ ± 0.173μ	21.8 0.436μ
^{60}Co	$ 10 and # 100 > 100 and # 120	μ ± 8.66 μ ± 0.0866μ	21.8 0.218μ
^{134}Cs	$ 10 and # 96	μ ± 8.66	21.8
^{137}Cs	$ 20 and # 100 > 100 and # 240	μ ± 8.66 μ ± 0.0866μ	21.8 0.218μ
^{65}Zn	$ 30 and # 50 > 50 and $ 360	μ ± 8.66 μ ± 0.173μ	21.8 0.436μ
^{3}H	$ 1000 and < 4000 $ 4000 and # 32,000	μ ± 294$\mu^{0.0933}$ μ ± 0.173μ	741$\mu^{0.0933}$ 0.436μ
^{131}I	$ 1 and # 15 > 15 and # 30	μ ± 3.46 μ ± 5.20	8.72 13.1
^{226}Ra	$ 1 and # 20	μ ± 0.260μ	0.654μ
^{228}Ra	$ 1 and # 20	μ ± 0.433μ	1.09μ
^{89}Sr	$ 10 and # 70	μ ± 8.66	21.8
^{90}Sr	$ 2 and # 45	μ ± 8.66	21.8
U	$ 2 and # 35 > 35 and # 70	μ ± 5.20 μ ± 0.173μ	13.1 0.436μ

Data Evaluation Procedure

Notation:

x_i	is the i^{th} result reported by the participant (i = 1, 2, 3)
$\bar{x}$	is the average of the participant's three results
r	is the range of the participant's three results (max ! min)
μ	is the assigned value (accepted true value)
σ	is the nominal (expected) standard deviation for the measurement method for a single determination (see Table 2)
LL	denotes a lower acceptance limit
UL	denotes an upper acceptance limit

Procedure to Test the Average:

1. Calculate the lower and upper acceptance limits for the average.

$$LL_{\bar{x}} = \mu - 3\sigma/\sqrt{3} \qquad UL_{\bar{x}} = \mu + 3\sigma/\sqrt{3}$$
$$LL_{\bar{x}} = \mu - 3^{1/2}\sigma \qquad UL_{\bar{x}} = \mu + 3^{1/2}\sigma$$

2. Calculate the average, $\bar{x}$, of the participant's results.

$$\bar{x} = \{x_1 + x_2 + x_3\}$$
$$\bar{x} = (x_1 + x_2 + x_3) / 3$$

Judge the average to be acceptable if $LL_{\bar{x}} \le \bar{x} \le UL_{\bar{x}}$.

Procedure to Test the Range:

1. Calculate the upper acceptance limit for the range.

$$UL_r = 4.358\sigma$$

2. Calculate the range, r, of the participant's results.

$$r = \max(x_1, x_2, x_3) - \min(x_1, x_2, x_3)$$

Judge the range to be acceptable if $r \le UL_r$.

Note: All the acceptance limits are "three-sigma" limits. The acceptance limits for the average are calculated using the standard deviation of the average, which equals $\sigma / 3^{1/2}$. The upper acceptance limit for the range is calculated using the standard deviation of the range, which equals 1.4526σ.

Table 2. Nominal Standard Deviations (F)*

Analyte	Assigned Value (μ), pCi/L	Standard Deviation (F), pCi/L
Gross Alpha	$ 3 and # 20 > 20 and # 75	5 0.25μ
Gross Beta	$ 4 and # 50 > 50 and # 65	5 10
^{133}Ba	$ 9 and # 50 > 50 and # 110	5 0.10μ
^{60}Co	$ 10 and # 100 > 100 and #120	5 0.05μ
^{134}Cs	$ 10 and # 96	5
^{137}Cs	$ 20 and # 100 > 100 and # 240	5 0.05μ
^{65}Zn	$ 30 and # 50 > 50 and $ 360	5 0.10μ
^{3}H	$ 1000 and < 4000 $ 4000 and # 32,000	$170\mu^{0.0933}$ 0.10μ
^{131}I	$ 1 and # 15 > 15 and # 30	2 3
^{226}Ra	$ 1 and # 20	0.15μ
^{228}Ra	$ 1 and # 20	0.25μ
^{89}Sr	$ 10 and # 70	5
^{90}Sr	$ 2 and # 45	5
U	$ 2 and # 35 > 35 and # 70	3 0.10μ

* from US EPA's "National Standards for Water Proficiency Testing Studies Criteria Document"